

WHAT IS CLAIMED:

1. A medical device for treating body tissue of a patient comprising:
  - (a) an elongated member having a proximal end and a distal end;
  - 5 (b) an expandable assembly disposed at the distal end of the elongated member, wherein the expandable assembly is capable of changing from a retracted position to an expanded position and the expandable assembly comprises a plurality of wire elements and wherein each wire element has a first end and a second end; and
  - 10 (c) a patch having two opposing surfaces; wherein one of the opposing surfaces comprises an adhesive material and a biologically active material; and wherein the other opposing surface is disposed upon at least one of the wire elements.
- 15 2. The medical device of claim 1 wherein the wire elements are arranged in an umbrella-like configuration when the expandable assembly is in the expanded position.
- 20 3. The medical device of claim 2 which further comprises an expansion mechanism for the expandable assembly.
- 25 4. The medical device of claim 3 wherein the expansion mechanism is a plunger having a lumen being sized to slidably receive a portion of the elongated member therein.
- 30 5. The medical device of claim 2 wherein one end of at least one wire element is connected to the distal end of the elongated member.
6. The medical device of claim 5 wherein the wire element is connected to the distal end of the elongated member at a flexible joint.
- 35 7. The medical device of claim 4 wherein one end of at least one wire element is flexibly connected to the plunger.
8. The medical device of claim 2 wherein the expandable assembly is self-expanding.

9. The medical device of claim 8 further comprising a guide sheath being sized to slidably receive the guidewire and expandable assembly in its retracted position.

10. The medical device of claim 1 wherein the wire elements are arranged in  
5 a basket-like configuration when the expandable assembly is in the expanded position.

11. The medical device of claim 10 wherein both ends of at least one wire element is connected to the distal end of the elongated member.

10

12. The medical device of claim 11 wherein at least two wire elements have midpoints between the ends of the wire elements and wherein the medical device further comprises a hub which connects the midpoints.

15

13. The medical device of claim 10 wherein at least one end of at least one wire element is connected to the distal end of the elongated member.

20

14. The medical device of claim 13 wherein the first end of the wire element is connected to the distal end of the elongated member and the second end of the wire is connected to the elongated member than the first end of the wire element.

25

15. The medical device of claim 10 which further comprises a sheath being sized to slidably receive the elongated member and expandable assembly in its retracted position.

30

16. The medical device of claim 10 which further comprises an expansion mechanism for expanding the expandable assembly.

17. The medical device of claim 16 wherein the expansion mechanism is a  
35 plunger having a lumen being sized to slidably receive a portion of the elongated member therein.

18. The medical device of claim 17 wherein one end of at least one wire element is flexibly connected to the plunger.

19. The medical device of claim 1 wherein a penetrating element is disposed at the distal end of the elongated member.

20. The medical device of claim 1 wherein the expandable assembly comprises about three or more wire elements.

21. The medical device of claim 20 wherein the expandable assembly  
5 comprises up to about twenty wire elements.

22. The medical device of claim 1 wherein each of the wire elements are of approximately equal lengths.

10

23. The medical device of claim 1 wherein each of the wire elements are approximately evenly spaced.

15

24. The medical device of claim 1 wherein the patch comprises a material selected from the group consisting of natural polymers, synthetic polymers, metals and biological fabric.

20

25. The medical device of claim 1 wherein the patch is circular in shape.

25

26. The medical device of claim 1 wherein the thickness of the patch is about 10 micron to about 1 mm.

27. The medical device of claim 1 wherein one side of the patch is substantially impermeable.

30

28. The medical device of claim 1 wherein the biologically active material is selected from a group consisting of cells, genetic materials and drugs.

35

29. The medical device of claim 28 wherein the cells are selected from the group consisting of endothelial progenitor cells, stem cells, cardiomyocytes, skeletal myoblasts and transformed cells.

30. The medical device of claim 28 wherein the genetic materials are nucleic acid molecules encoding proteins selected from the group consisting of FGF, FGF-1, FGF-2, EMGF and VEGF.

31. The medical device of claim 28 wherein the drugs are selected from the group consisting of estrogen, estradiol, estriol, dioxin, captopril and enalapril.

32. The medical device of claim 1 wherein the opposing surface of the patch which comprises an adhesive material further comprises carbowax.

33. The medical device of claim 1 wherein the adhesive material is a  
5 bioadhesive material selected from the group consisting of hydrogels, fibrin glue, cyanoacrylates, gelatin-resorcinol formaldehyde-glutaraldehyde, synthetic gums and natural gums.

10 34. The medical device of claim 1 wherein the opposing surface of the patch comprising the biologically active material further comprises a plurality of microneedles.

15 35. A medical device for treating body tissue of a patient comprising:  
(a) an elongated member having a proximal end and a distal end;  
(b) an umbrella-like expandable assembly comprising a plurality of  
20 wire elements wherein the assembly is disposed at the distal end of the elongated member; wherein the expandable assembly is capable of changing from a retracted position to an expanded position and wherein each wire element has two opposing ends;  
and  
(c) a patch having two opposing surfaces; wherein one of the  
25 opposing surfaces comprises an adhesive material and a biologically active material; and wherein the other opposing surface is disposed upon at least one of the wire elements.

30 36. A medical device for treating body tissue of a patient comprising:  
(a) an elongated member having a proximal end and a distal end;  
(b) a basket-like expandable assembly comprising a plurality of wire  
35 elements wherein the expandable assembly is disposed at the distal end of the elongated member; wherein the expandable assembly is capable of changing from a retracted position to an expanded position and wherein each wire element has two opposing ends; and  
(c) a patch having two opposing surfaces; wherein one of the opposing surfaces comprises an adhesive material and a biologically active material; and wherein the other opposing surface is disposed upon at least one of the wire elements.